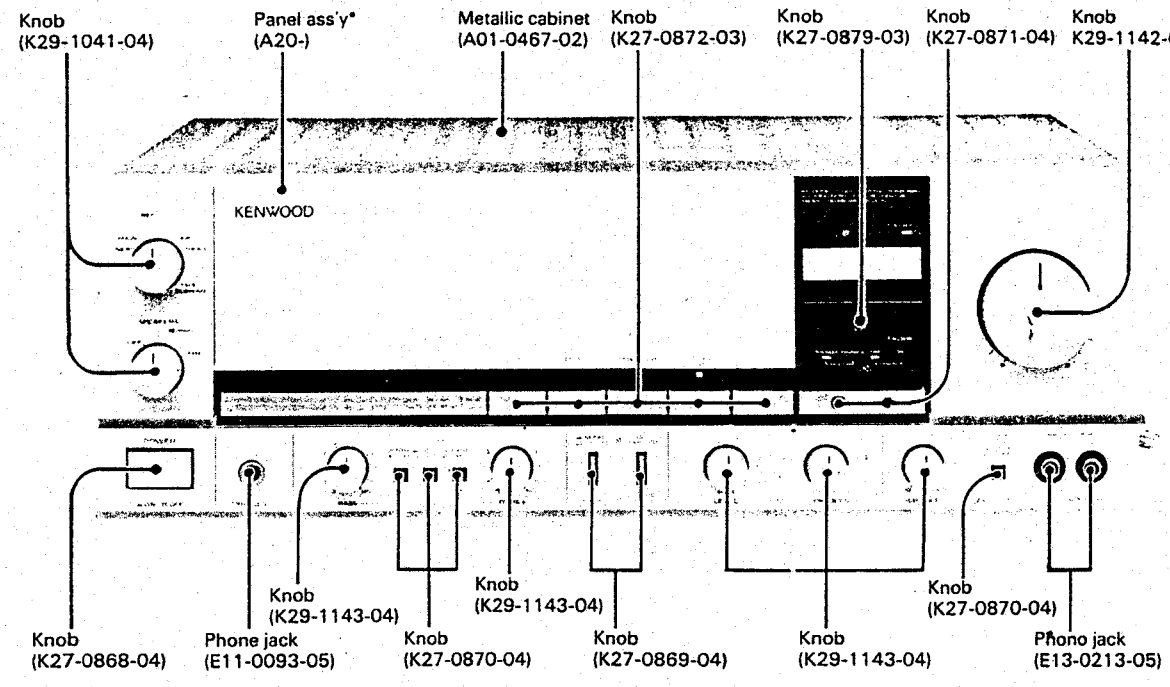
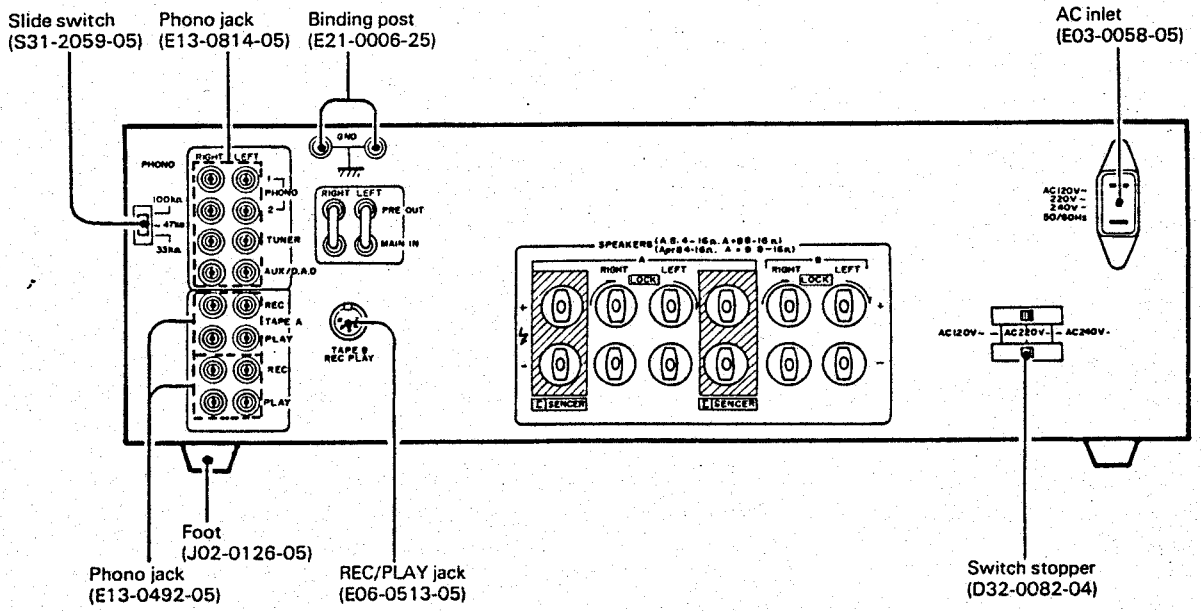
SERVICE MANUAL

KENWOOD KA-2200

NEW HIGH SPEED STEREO INTEGRATED AMPLIFIER





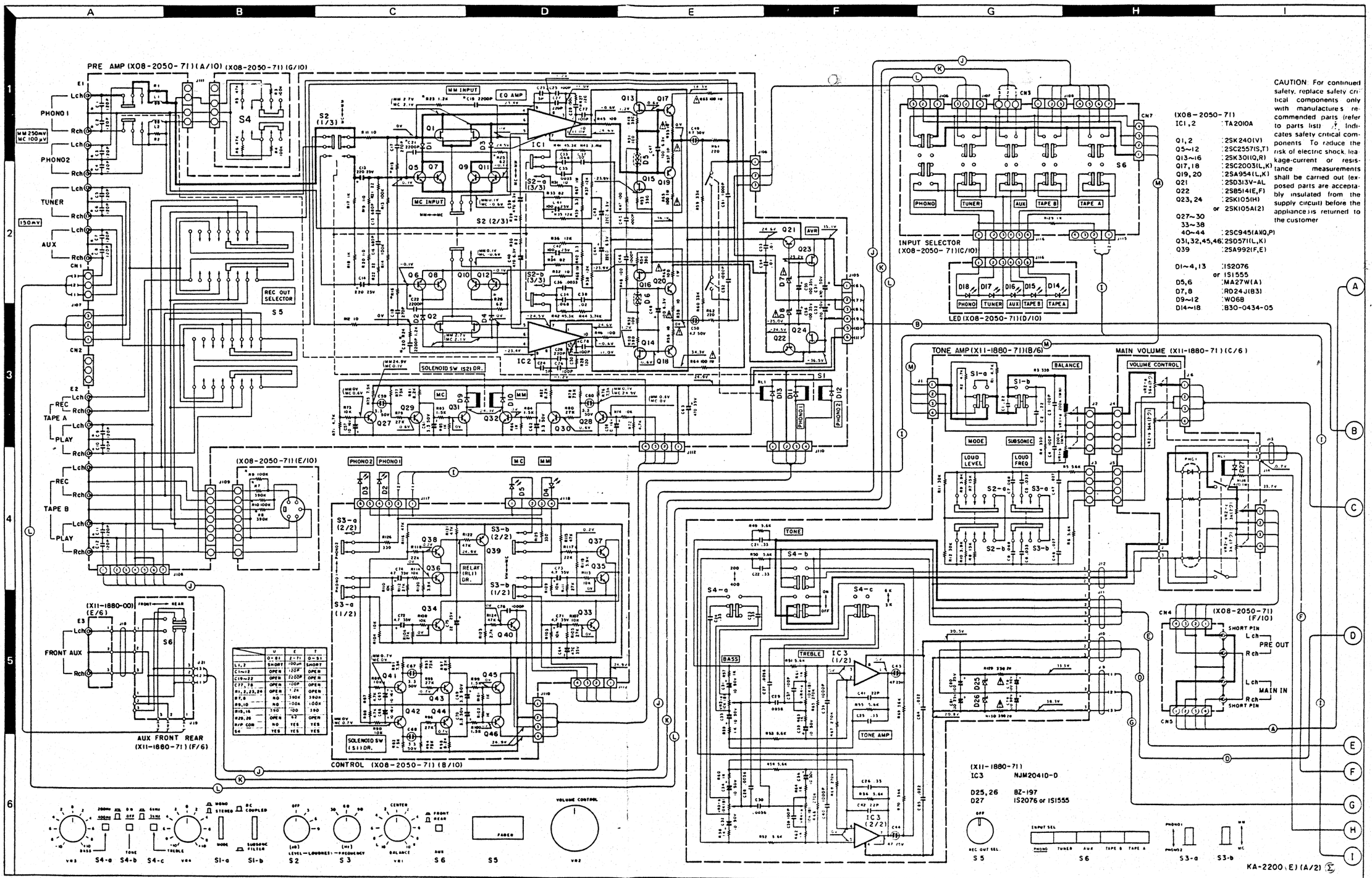
*Refer to Parts List on page 11.
Photo is E type.

500

KENWOOD

STEREO INTEGRATED AMPLIFIER

KA-2200



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

(X08-2050-71)

IC1,2	:TA2010A
Q1,2	:2SK240(V)
Q5~12	:2SC2557(S,T)
Q13~16	:2SK301(Q,R)
Q17,18	:2SC2003(L,K)
Q19,20	:2SA954(L,K)
Q21	:2SD313V-AL
Q22	:2SB514(E,F)
Q23,24	:2SK105(H) or 2SK105A(2)
Q27~30, 33~38, 40~44	:2SC945(AKQ,P)
Q31,32,45,46	:2SD571(L,K)
Q39	:2SA992(F,E)
D1~4,13	:IS2076 or IS1555
D5,6	:MA27W(A)
D7,8	:RD24JB(3)
D9~12	:W06B
D14~18	:B30-0434-05

	U	E	T
	0~81	2~71	0~51
L1,2	SHORT	100μH	SHORT
C1~12	OPEN	120P	OPEN
C19~22	OPEN	22.05P	OPEN
C77,78	OPEN	100P	OPEN
R1,2,23,24	OPEN	1.2K	OPEN
R3,4	NO	390K	390K
R9,10	NO	100K	100K
R15,16	390	100	390
R29,30	OPEN	47	OPEN
R/P COM	NO	YES	YES
S4	YES	YES	YES

2SA954
2SA992
2SC2003
2SC945

2SD571

2SB514
2SC2557
2SD313V-AL

2SK105
2SK105A
2SK301

2SK240

NJM2041D-D

TA2010A

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

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STER

(X07-2030)

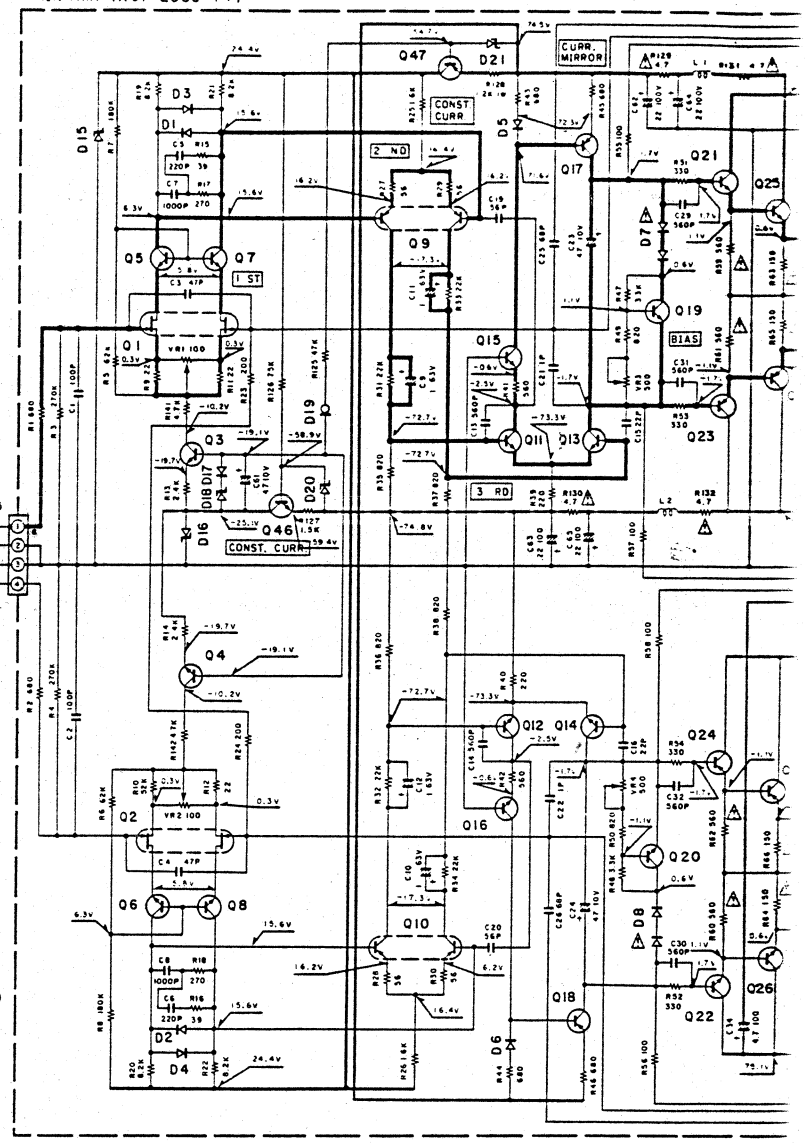
IC1,2	: TA2030
IC3	: μPC1237H
Q1,2	: μPA68H(K,L)
Q3~8	: 2SC1845
Q9,10	: μPA75V(F,E)
Q11,12,15,16,46	: 2SC2632(Q,R,S)
Q13,14	: 2SC2632A
Q17,18	: 2SA1124A
Q19,20	: 2SC1841
Q21,22,43,44	: 2SC2631A
Q23,24	: 2SA1123A
Q25,26	: 2SC2592
Q27,28	: 2SA1112*1
Q29,30,33,34	: DAT2101 or DAT1018N
Q31,32,35,36	: DAT2201 or DAT1018P
Q37,38	: 2SC2320
Q39~42	: 2SA999
Q45	: 2SA988
Q47	: 2SA957
	:
D1~6,17	: 1S2076
D7,8	: STV-2H
D9~12	: UF-21
D13,14,22~25	: 1S2076A
D15,16	: RD24J(B2,B3)
D18	: RD5.6J(B1)
D19	: E-102
D20	: RD16J(B2)
D21	: RD22J(B2)

CAUTION: For continued safety, replace safety critical components only with manufacture's recommended parts (refer to parts list) ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

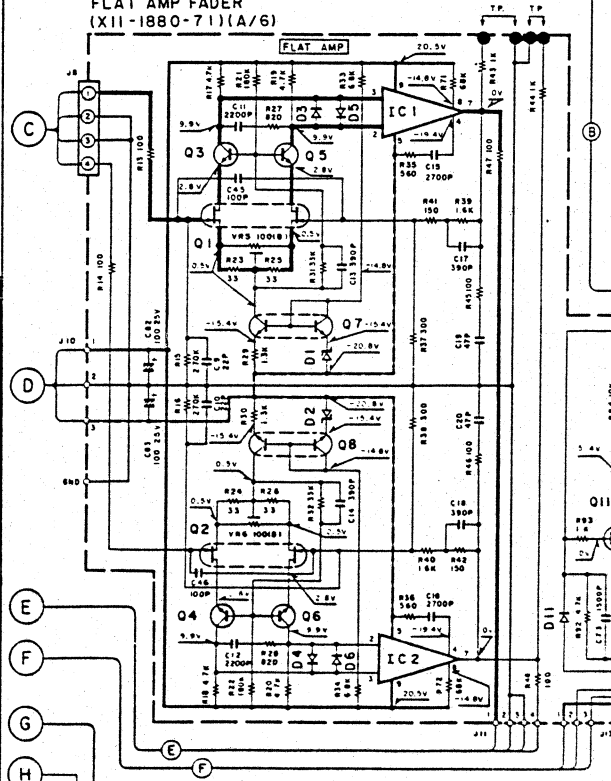
(X11-1880-71)(A/4)

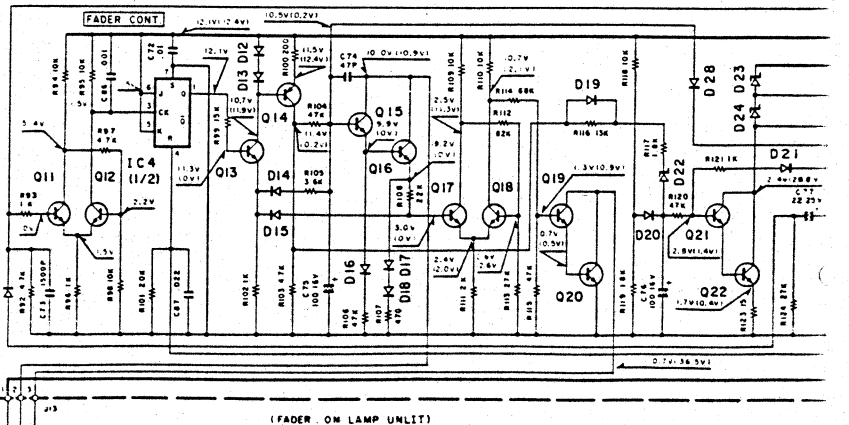
IC1,2	: TA7322P	D1,2	: RD5.6J(B1)
IC4	: UPD4027BC or TC4027BP	D3~6	: 1N60
		D11~21,28	: 1S2076 or 1S1555
Q1,2	: UPA68H(L,M)	D22	: RD8.2J(B2)
Q3~6,21	: 2SC1845(F,E)	D23,24	: WZ-135
Q7,8	: 2SC2291(F,G)		
Q11,12,17,18	: 2SC945(A)(P,K) or 2SC2320(E,F,G)		
Q13,15,16,19,23	: 2SC945(A)(Q,P)		
Q14	: 2SA733(A)(Q,P)		
Q20	: 2SC2003		
Q22	: 2SC2167		

MAIN AMP (X07-2030-71)



FLAT AMP FADER (X11-1880-71)(A/6)

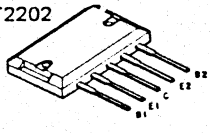




(FADER . ON LAMP UNLIT)

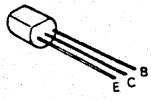
DAT1015N
DAT1015P
DAT1018N
DAT1018P
DAT2101
DAT2102

DAT2201
DAT2202

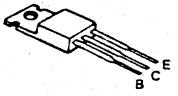


2SA1123A
2SA1124A
2SA733
2SA988
2SA999
2SC1841

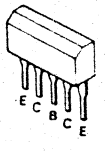
2SC1845
2SC2320
2SC2631A
2SC2632A
2SC945
2SC2003



2SA1112
2SA957
2SC2167
2SC2592
2SC2632
2SD313V-AL



2SC2291



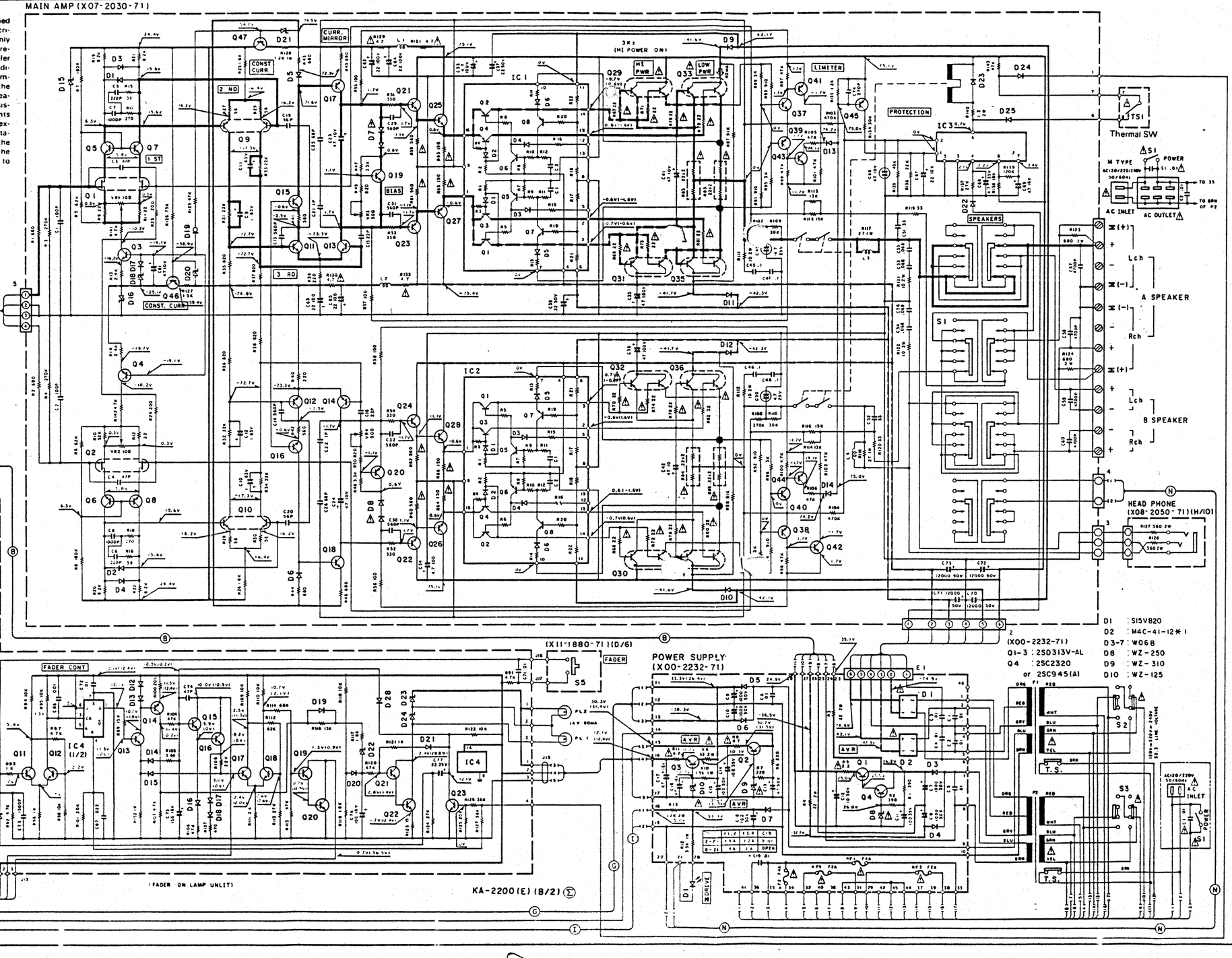
OOD

STEREO INTEGRATED AMPLIFIER

KA-2200

CAUTION: For continued safety, replace safety critical components only with manufacture s recommended parts (refer to parts list) ⚠. Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

MAIN AMP (X07-2030-71)



D1, 2 : RD 5.6 J (B1)
D3~6 : 1N60
D11~21, 28 : 1S2076 or 1S1555
D22 : RD 8.2 J (B2)
D23, 24 : WZ-135

(X00-2232-71)
Q1~3 : 2SD313V-AL
Q4 : 2SC2320 or 2SC945(A)
D1 : S15VB20
D2 : M4C-41-12*1
D3~7 : W06B
D8 : WZ-250
D9 : WZ-310
D10 : WZ-125

2SA1123A 2SC1845
2SA1124A 2SC2320
2SA733 2SC2631A
2SA988 2SC2632A
2SA999 2SC945
2SC1841 2SC2003

2SA1112
2SA957
2SC2167
2SC2592
2SC2632
2SD313V-AL

2SC2291 μPA75V μ²A68H TC4027BP μPD4027BC TA7322P μPC1237H TA2030

SPECIFICATIONS

Total Harmonic Distortion (20 Hz to 20,000 Hz)	
AUX input to SPEAKER output	0.003% at rated power into 8 ohms 0.003% at 1/2 rated power into 8 ohms
PHONO input to SPEAKER output	0.005% at rated power with VOLUME −20 dB
Intermodulation Distortion (60 Hz: 7 kHz = 4 : 1)	0.003% at rated power into 8 ohms
Damping Factor	1,000 at 100 Hz
Transient Response	
Rise Time	1.7 μS
Slew Rate	± 100 V/μS
Frequency Response	
(DC COUPLED at ON)	DC to 200 kHz, +0 dB, −3 dB
(DC COUPLED at OFF)	DC to 200 kHz, +0 dB, −3 dB
Speaker Impedance	Accept 4 ohms to 16 ohms
Input Sensitivity/Impedance	
Phono (MM)	2.5 mV/33 kohms, 47 kohms and 100 kohms
Phono (MC)	0.1 mV/100 ohms
Tuner, AUX, Tape A, B	150 mV/47 kohms
Signal to Noise Ratio (IHF.A)	
Phono (MM)	88 dB for 2.5 mV input 94 dB for 5.0 mV input 100 dB for 10 mV input
Phono (MC)	70 dB for 0.1 mV input 76 dB for 0.2 mV input
Tuner, AUX, Tape A, B	110 dB for 150 mV input
Maximum Input Level	
Phono (MM)	260 mV (RMS), THD 0.003% at 1,000 Hz
Phono (MC)	10 mV (RMS) THD 0.003% at 1,000 Hz
Output Level/Impedance	
Tape REC (Pin)	150 mV/220 ohms
(DIN)	30 mV/80 kohms
Phono Frequency Response	RIAA standard curve ±0.2 dB (20 Hz to 20 kHz)
Tape Control	
Bass Turnover Freq.	
200 Hz	± 10 dB at 50 Hz
400 Hz	± 10 dB at 100 Hz
Treble Turnover Freq.	
3 kHz	± 10 dB at 10 kHz
6 kHz	± 10 dB at 20 kHz
Loudness Control (at −40 dB VOLUME Level)	
30 Hz	+3/6/9 dB
60 Hz	+3/6/9 dB
90 Hz	+3/6/9 dB
Subsonic Filter	18 Hz, 6 dB/oct

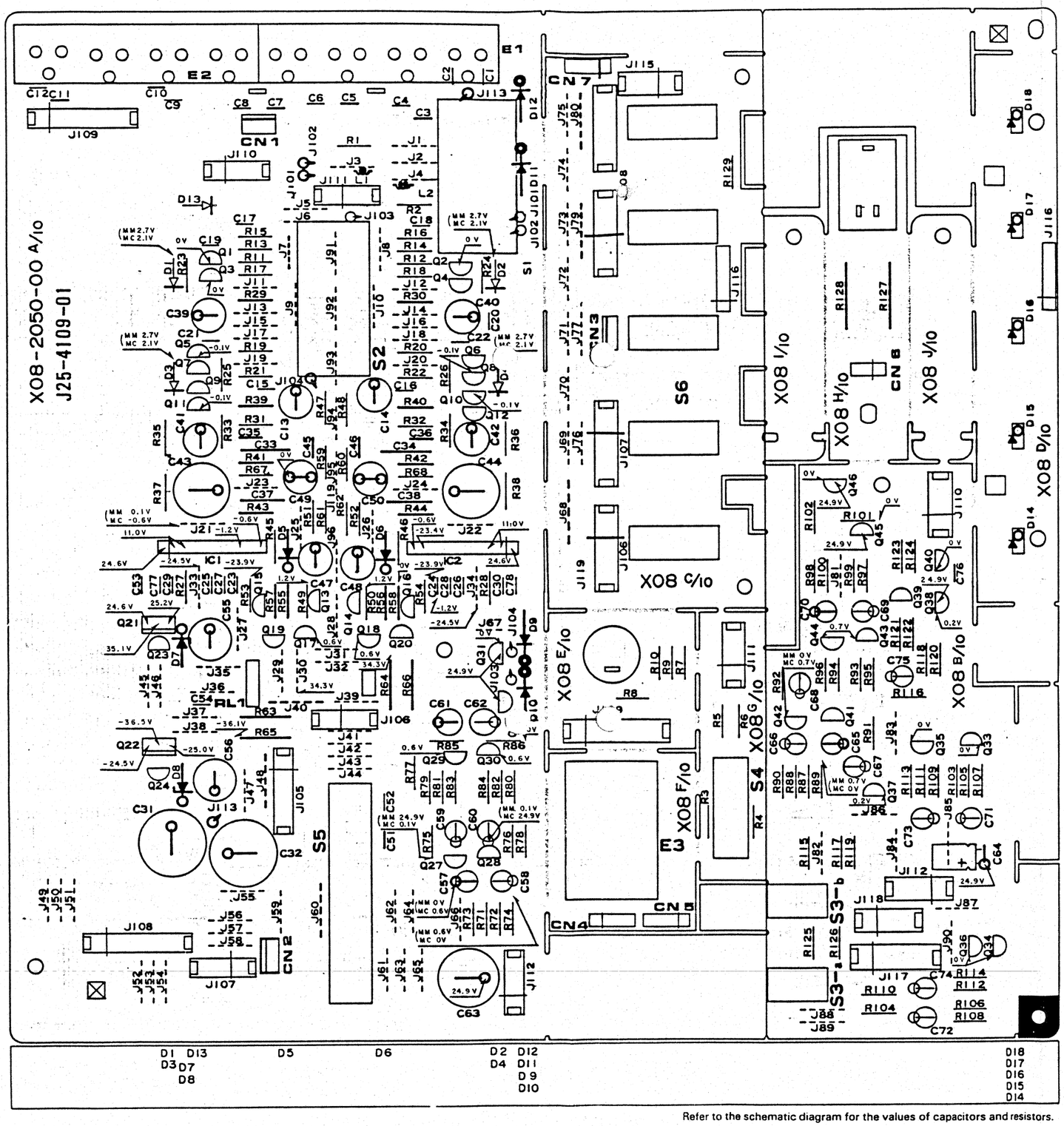
GENERAL

Power Requirements	50 Hz 220V European Model 50 Hz 240V UK Model, or 50/60 Hz 110 120/220-240V (switchable)
Power Consumption	960W at Rated Output at 8 ohms
A.C. Outlet	Switched 2, Unswitched 1
Dimensions	W 440 mm (17 5/16") H 158 mm (6-7/32") D 383 mm (15-3/32")

DC voltages are as measured with a high impedance voltmeter with no signal input. Values may vary slightly due to variations between individual instruments or/and units.

PC BOARD

PREAMP
(X08-2052-71)
Component side view



Front

Refer to the schematic diagram for the values of capacitors and resistors.
The PC board drawing is viewed from the side easy to check.

In this model, there are separated pc boards which were originally one. These separated pc boards can't be supplied independently.

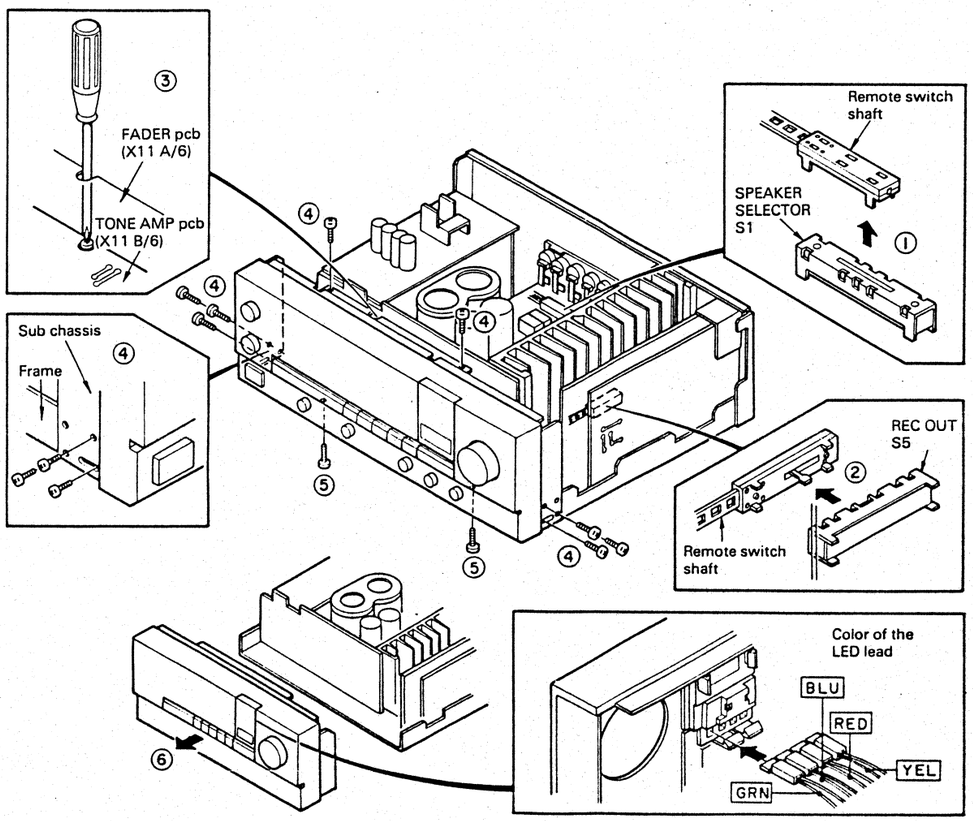
Ex.	Part No. of pc board	Separated portion No.
	X09-1230-00	(A/3)
	X09-1230-00	(B/3)
	X09-1230-00	(C/3)

In the example shown above, separated portion can't be ordered independently. In case only A/3 was ordered, pc board ass'y of X09-1230-00, which all A/3, B/3, C/3 included, will be shipped.

DISASSEMBLY FOR REPAIR

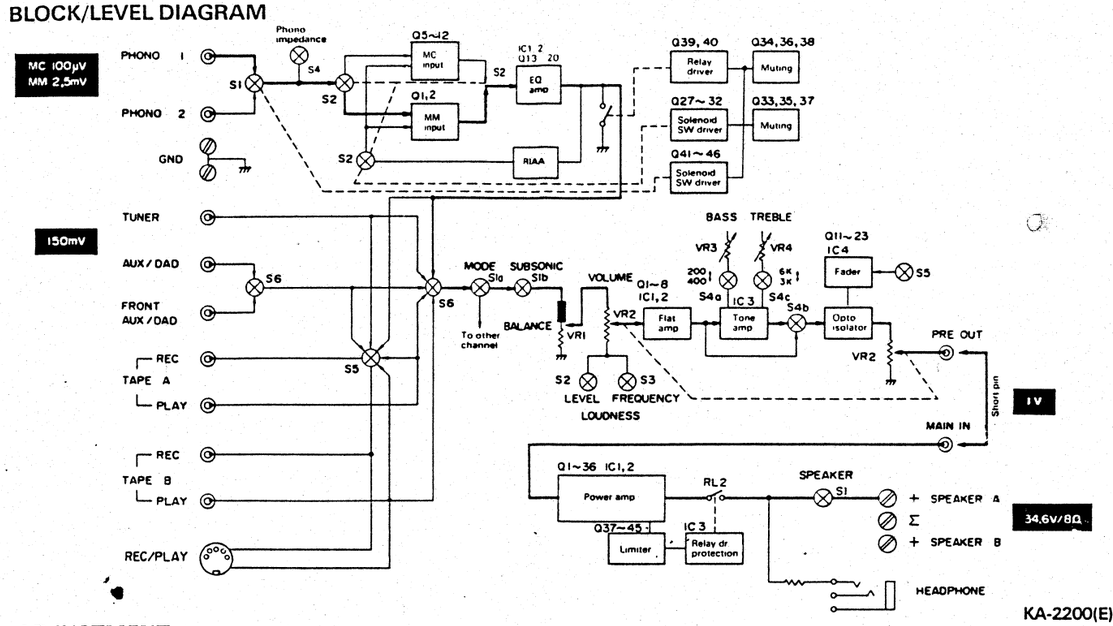
1. Fader pc board (X11 A/6) can be removed without removing the panel ass'y. When replacing the components on the pc boards, it is recommended to remove the panel ass'y before disassembly. The other pc boards can be removed, all attached to the sub pannel, by the following procedures.
   In the figure below, the panel ass'y is kept on to show that disassembly can be done without removing panel ass'y.
2. Pull the remote switch shaft of SPEAKER selector S1 and REC OUT selector S5 up to disengage them from the switches (①, ②).

   NOTE: Do not change the position of the selector knobs after removing the remote switch shaft. If changed, either the remote switch shaft can not be plugged in or the position of the switch and the selected indication on the panel ass'y will not match. Also, be careful of the remote switch shaft. If the covering of the remote switch shaft (the blue plastic part) breaks, the switch can not be operated.
3. Insert a screw driver through the round cutting of FADER pc board (X11 A/6) and remove the screw on the TONE AMP pc board (X11 B/6) (③).
4. Remove 2 backmost screws on the FADER pc board and 6 screws on the sides of the sub panel (④).
5. Remove 2 screws right behind the panel ass'y on the bottom plate (⑤).
6. In this condition, the following pc boards will be separated all attached to the sub panel.
   The pc boards are, FADER (X11 A/6), FADER SWITCH (X11 D/6), VOLUME (X11 C/6), PHONO 1/2, MM/MC SWITCH (X08 B/10), SELECTOR (X08 C/10), TONE AMP (X11 B/6), HEADPHONE (X08 H/10), FRONT/REAR AUX/DAD (X11 E/6, F/6).



BLOCK/LEVEL DIAGRAM/ADJUSTMENT

BLOCK/LEVEL DIAGRAM



KA-2200(E)

ADJUSTMENT

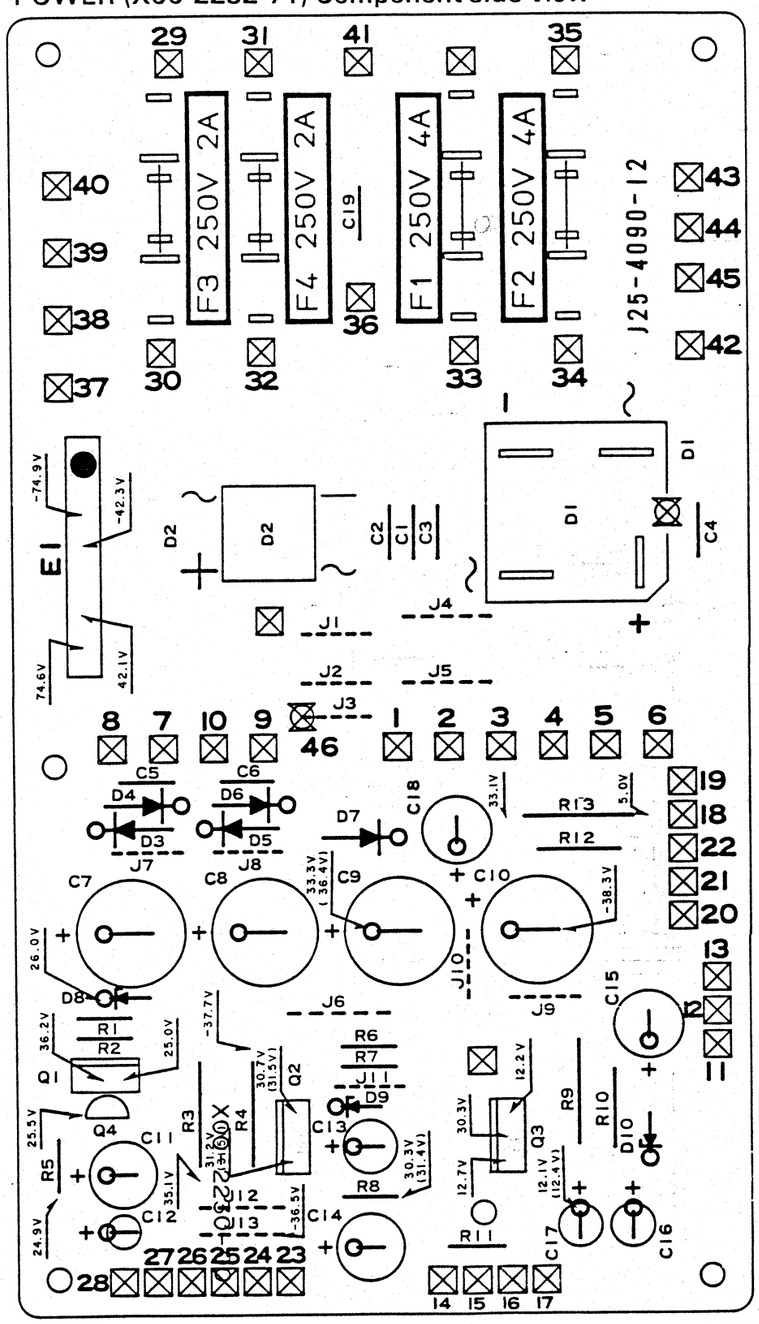
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Unless otherwise specified, the individual switches should be set as follows: SPEAKER: B REC OUT: OUT SELECTOR: PHONO							
1	**OFFSET (X11-1882-71)**	–	Connect a DC voltmeter to TP of X11 A/6.	MM/MC: MM	VR5 (L) VR6 (R)	0V	(a)
2	**OFFSET (X07-2032-71)**	–	Connect a DC voltmeter to SPEAKER B terminal.	VOLUME: 0	VR1 (L) VR2 (R)	0V	(b)
3	**IDLE CURRENT (X07-2032-71)**	–	Connect a DC voltmeter across R85 (L) R86 (R)	VOLUME: 0	VR3 (L) VR4 (R)	9 mV	(c)

REGLAGE

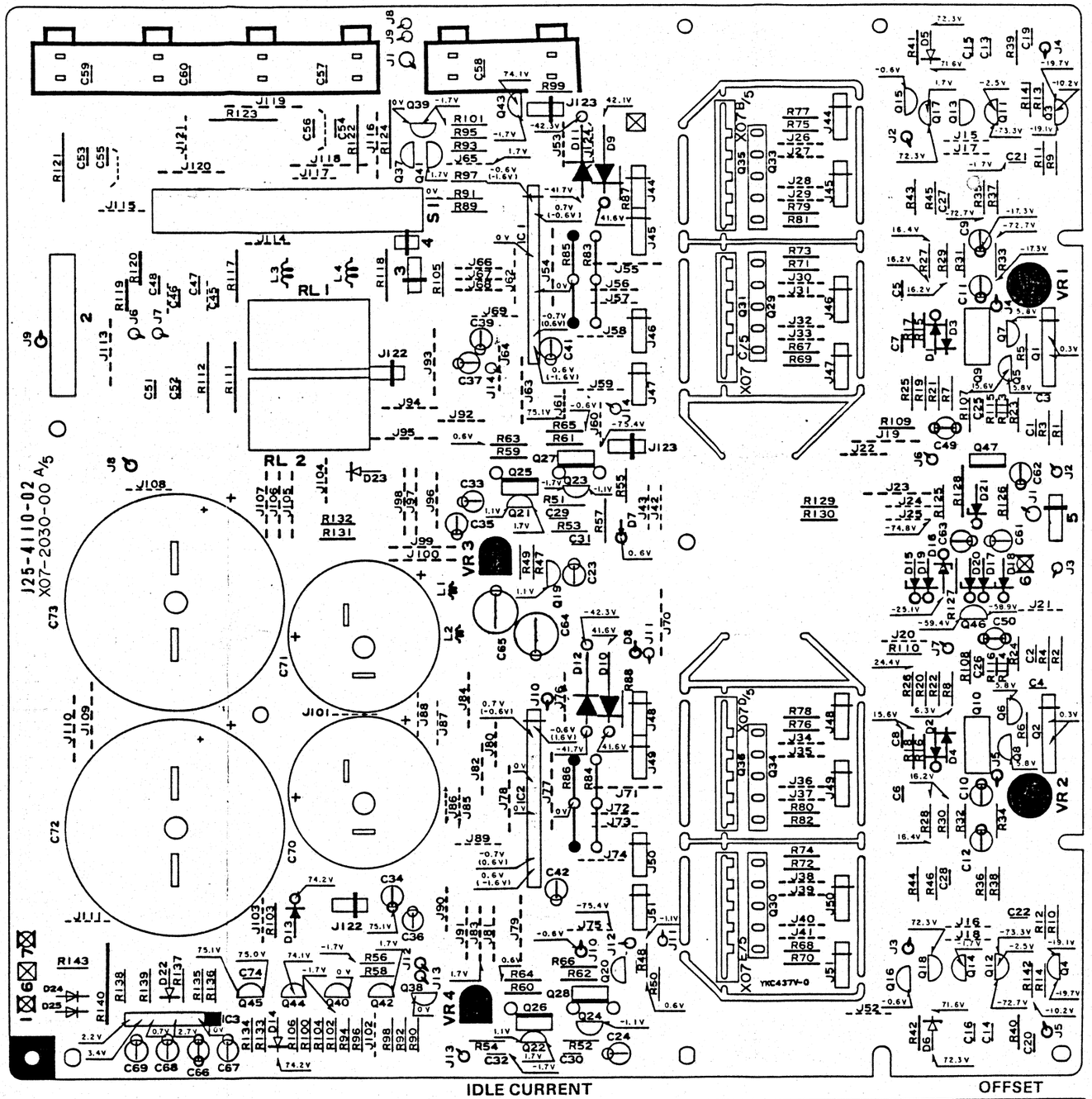
N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS DE L'ALIGNMENT	ALIGNER POUR	FIG.
Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SPEAKER: B REC OUT: OUT SELECTOR: PHONO							
1	**OFFSET (X11-1882-71)**	–	Connecter un voltmètre de CC aux TP de X11 A/6.	MM/MC: MM	VR5 (L) VR6 (R)	0V	(a)
2	**OFFSET (X07-2032-71)**	–	Connecter un voltmètre de CC aux bornes de sortie + et – (SPEAKER B)	VOLUME: 0	VR1 (L) VR2 (R)	0V	(b)
3	**COURANT DE POLARISATION**	–	Connecter un voltmètre de CC SUR R85 (D) R86 (G)	VOLUME: 0	VR3 (L) VR4 (R)	9 mV	(c)

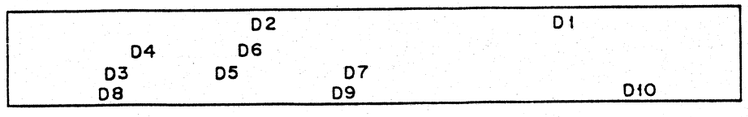
PC BOARD

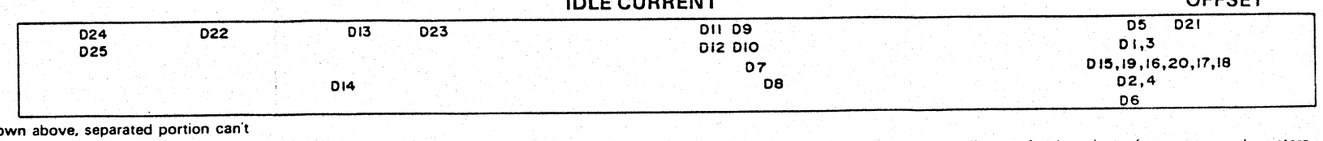
POWER (X00-2232-71) Component side view



POWER AMP (X07-2032-71) Component side view







In this model, there are separated pc boards which were originally one. These separated pc boards can't be supplied independently.

Ex.

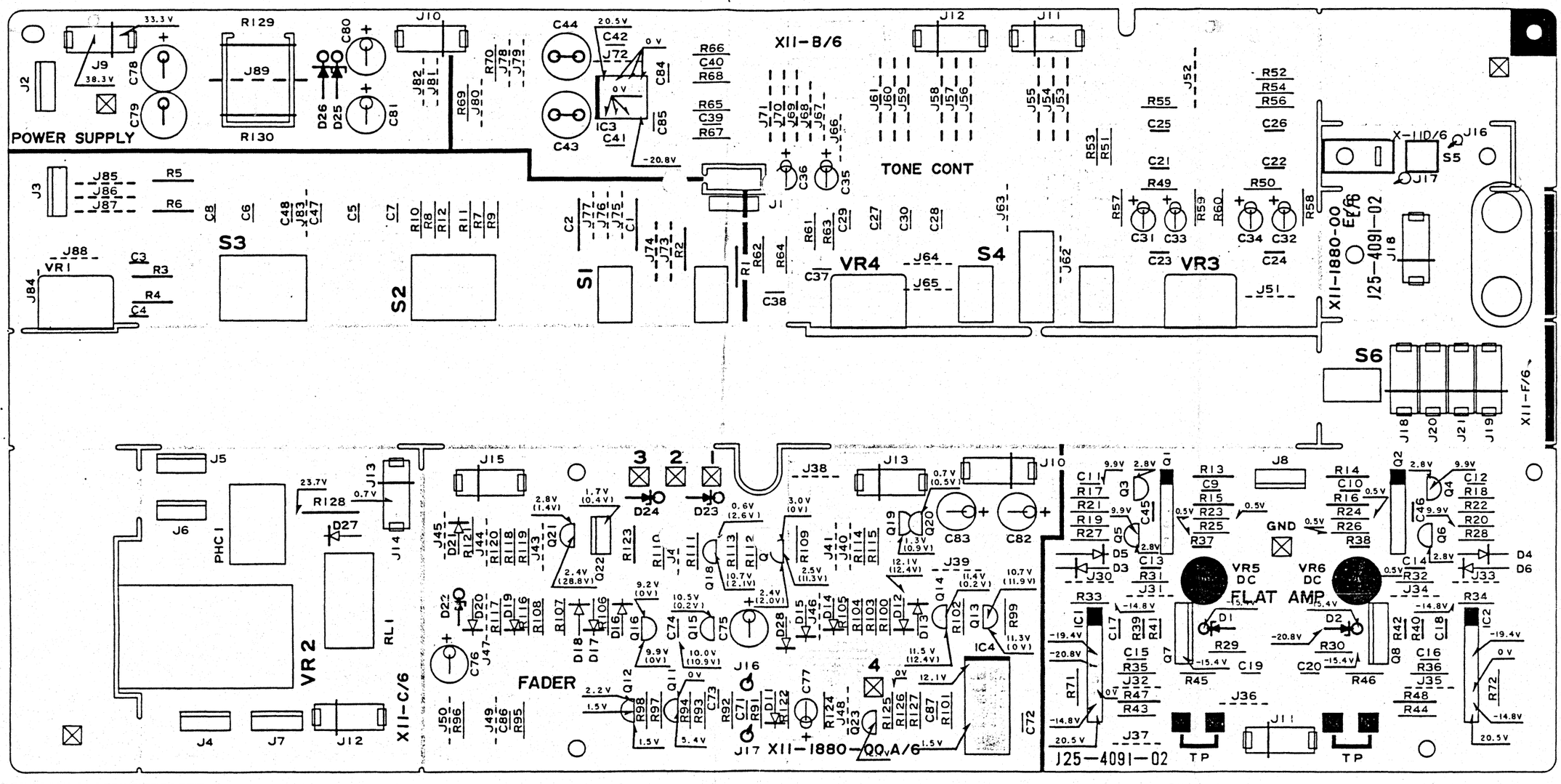
Part No. of pc board	Separated portion No.
X09-1230-00	(A/3)
X09-1230-00	(B/3)
X09-1230-00	(C/3)

In the example shown above, separated portion can't be ordered independently. In case only A/3 was ordered, pc board ass'y of X09-1230-00, which all A/3, B/3, C/3 included, will be shipped.

Refer to the schematic diagram for the values of capacitors and resistors.
The PC board drawing is viewed from the side easy to check.

PC BOARD

CONTROL (X11-1882-71) Component side view



D26, 25 D27 | D21 D22,20,19 | D24 D18,17,16 | D23 D11 | D28,15,14 | D12,13 | D5 D3 | D1 | D2 | D4 D6

Refer to the schematic diagram for the values of capacitors and resistors.
The PC board drawing is viewed from the side easy to check.

In this model, there are separated pc boards which were originally one. These separated pc boards can't be supplied independently.

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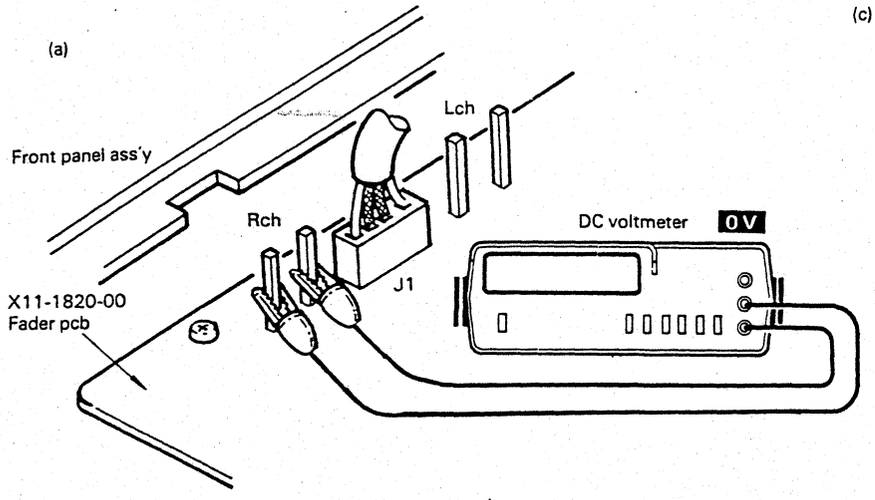
	X09-1230-00	(B/3)
	X09-1230-00	(C/3)

In the example shown above, separated portion can't be ordered independently. In case only A/3 was ordered, pc board ass'y of X09-1230-00, which all A/3, B/3, C/3 included, will be shipped.

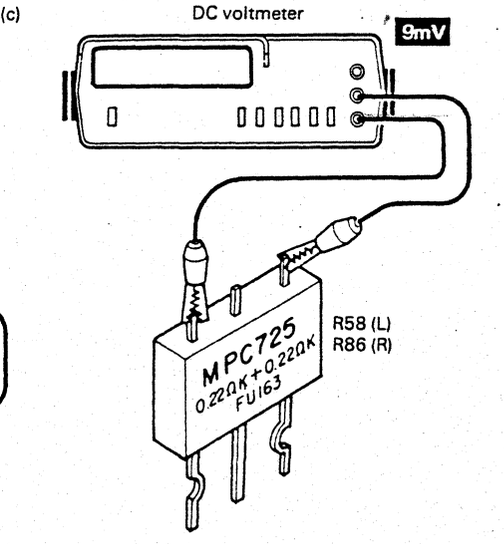
ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANG-EINSTELLUNG	VORSTÄRKER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: SPEAKER: B REC OUT: OUT SELECTOR: PHONO							
1	**OFFSET (X11-1882-71)**	–	Einen Gleichspannungs-messer über TP von X11 A/6 anschließen.	MM/MC: MM	VR5 (L) VR6 (R)	0V	(a)
2	**OFFSET (X07-2032-71)**	–	Einen Gleichspannungs-messer über SPEAKER B anschließen.	VOLUME: 0	VR1 (L) VR2 (R)	0V	(b)
3	**LEERLAUF-STROM**	–	Einen Gleichspannungs-messer über R85 (L) R86 (R)	VOLUME: 0	VR3 (L) VR4 (R)	9 mV	(c)

(a)



(c)



(b)